CLAIMS

1. An Orthogonal Frequency Division Multiplexing (OFDM) receiver that is adapted to receive OFDM signals, the OFDM receiver comprising:

a buffer (68) that stores data corresponding to the OFDM signals;

a processor that is adapted to receive data from the buffer (68), perform computations on the data and return data to the buffer (68);

an equalizer module (78) adapted to receive data from the buffer (68) and equalize the data; and

a receiver controller (62) that controls access to the buffer (68) by the processor and controls the transfer of data from the buffer (68) to the equalizer module.

2. The OFDM receiver of claim 1, comprising:

a pilot frame tracking module (86) that is adapted to move an FFT window location by changing an index pointer to the buffer (68).

3. The OFDM receiver of claim 1, comprising:

a pilot carrier tracking module (74) adapted to provide pilot carrier tracking data to the buffer (68); and

a fine carrier estimation module (72) that is adapted to access the buffer (68) to obtain the pilot carrier tracking data.

4. The OFDM receiver of claim 1, comprising:

an equalizer tap initialization module (80) that is adapted to exchange data with the buffer (68); and

a least mean squares (LMS) adaptation engine (76) that is adapted to provide input to the equalizer tap initialization module (80).

5. The OFDM receiver of claim 4, wherein the equalizer tap initialization module (80) is adapted to reuse output from the LMS adaptation engine to perform a recursive division algorithm.

6. The OFDM receiver of claim 1, comprising:

a least mean squares (LMS) adaptation engine (76) that is adapted to provide input to the equalizer module (78); and

wherein the equalizer module (78) is adapted to reuse the data provided by the LMS adaptation engine (76) to compute a least mean squares tap update value.

7. The OFDM receiver of claim 1, comprising:

a fine frame synchronization module (82) adapted to exchange data with the buffer (68); and

a least mean squares (LMS) adaptation engine (76) that is adapted to provide input to the fine frame synchronization module (82).

8. The OFDM receiver of claim 7, wherein the fine frame synchronization module (82) is adapted to reuse output from the LMS adaptation engine (76) to perform a recursive division algorithm.

9. The OFDM receiver of claim 1, comprising:

a coarse carrier estimation and frame synchronization module (70) that is adapted to exchange data with the buffer (68); and

wherein the receiver controller (62) is adapted to allow the coarse carrier estimation and frame synchronization module (70) to access the buffer (68) responsive to receipt of at least a portion of a preamble by the OFDM receiver.

10. The OFDM receiver of claim 1, comprising:

an equalizer tap initialization module (80) that is adapted to exchange data with the buffer (68);

a fine carrier estimation module (72) that is adapted to exchange data with the buffer (68);

a fine frame synchronization module (82) that is adapted to exchange data with the buffer (68); and

wherein the receiver controller (62) is adapted to allow the equalizer tap initialization module (80), the fine carrier estimation module (72) and the fine frame synchronization module (82) to access the buffer (68) responsive to receipt of at least a portion of a preamble by the OFDM receiver.

11. The OFDM receiver of claim 1, comprising:

a pilot carrier tracking module (74) that is adapted to receive data from the equalizer module (78);

a pilot frame tracking module (86) that is adapted to provide data to the buffer (68); and

wherein the receiver controller (62) is adapted to activate the equalizer module (78), the pilot carrier tracking module (74) and the pilot frame tracking module (86) responsive to the receipt of at least a portion of an OFDM signal by the OFDM receiver.

12. The OFDM receiver of claim 1, wherein the receiver controller (62) is a state machine.

13. A device, comprising:

a buffer (68) that stores data corresponding to signals;

a processor that is adapted to receive data from the buffer (68), perform computations on the data and return data to the buffer (68);

an equalizer module (78) adapted to receive data from the buffer (68) and equalize the data; and

a device controller (62) that controls access to the buffer (68) by the processor and controls the transfer of data from the buffer (68) to the equalizer module (78).

14. The device of claim 13, comprising:

a pilot frame tracking module (86) that is adapted to move an FFT window location by changing an index pointer to the buffer (68).

15. The device of claim 13, comprising:

a pilot carrier tracking module (74) adapted to provide pilot carrier tracking data to the buffer (68); and

a fine carrier estimation module (72) that is adapted to access the buffer (68) to obtain the pilot carrier tracking data.

16. The device of claim 13, comprising:

an equalizer tap initialization module (80) that is adapted to exchange data with the buffer (68); and

a least mean squares (LMS) adaptation engine (76) that is adapted to provide input to the equalizer tap initialization module (80).

17. The device of claim 13, comprising:

a least mean squares (LMS) adaptation engine (76) that is adapted to provide input to the equalizer module (78); and

wherein the equalizer module (78) is adapted to reuse the data provided by the LMS adaptation engine (76) to compute a least mean squares tap update value.

18. The device of claim 13, comprising:

a coarse carrier estimation and frame synchronization module (70) that is adapted to exchange data with the buffer (68); and

wherein the device controller (62) is adapted to allow the coarse carrier estimation and frame synchronization module (70) to access the buffer (68) responsive to receipt of at least a portion of a preamble signal.

19. The device of claim 13, comprising:

an equalizer tap initialization module (80) that is adapted to exchange data with the buffer (68);

a fine carrier estimation module (72) that is adapted to exchange data with the buffer (68);

a fine frame synchronization module (82)that is adapted to exchange data with the buffer (68); and

wherein the device controller (62) is adapted to allow the equalizer tap initialization module (80), the fine carrier estimation module (72) and the fine frame synchronization module (82) to access the buffer (68) responsive to receipt of at least a portion of a preamble signal.

20. The device of claim 1, comprising:

a pilot carrier tracking module (74) that is adapted to receive data from the equalizer module (78);

a pilot frame tracking module (86) that is adapted to provide data to the buffer (68); and

wherein the device controller (62) is adapted to activate the equalizer module (78), the pilot carrier tracking module (74) and the pilot frame tracking module (86) responsive to the receipt of a signal by the device.